



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/595,772

08/08/2008

Jurgen Dannenmaier

04914.0054-00000

6370

22852

7590

04/06/2011

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP

901 NEW YORK AVENUE, NW  
WASHINGTON, DC 20001-4413

EXAMINER

GREENE, JASON M

ART UNIT

PAPER NUMBER

1775

MAIL DATE

DELIVERY MODE

04/06/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/595,772	<b>Applicant(s)</b> DANNENMAIER ET AL.	
	<b>Examiner</b> Jason M. Greene	<b>Art Unit</b> 1776	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 33-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-72 is/are rejected.
- 7) ☒ Claim(s) 63 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/9/06</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claims***

1. Claim 47 recites a velocity of 3m/mm in the last two lines of the claim. However, it appears as though this should read as 3m/min to have proper units for velocity. If this is correct the Examiner suggests Applicants amend the claim accordingly to correct an apparent typographical error.

2. With regard to claim 63, the Examiner suggests Applicants rewrite the phrase "en-cap" at line 12 as "end-cap" to correct an apparent typographical error.

### ***Claim Objections***

3. Claim 63 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 63 depends from cancelled claim 25. It appears however claim 63 was intended to depend from claim 33 and such has been assumed for examination. If this is correct, the Examiner suggests Applicants amend the claim accordingly.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 33-54, 57, 65-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application Publication EP 0 292 445 in view of Lipps et al. (US 4,234,871).

EP 0 292 445 discloses a degassing device comprising a first chamber (12) having an inlet (adjacent the ends of the hollow fibers 3) for a liquid, and a second chamber (13) having an opening (aperture 17) closed by a vent device (18) and an outlet (10) for discharging the liquid, wherein the first chamber has a downstream portion that extends partially within the second chamber and communicates therewith by a passageway (adjacent to 14), and the second chamber has a downstream portion that extends below the passageway and asymmetrically surrounds the downstream portion of the first chamber, wherein the downstream portion of the second chamber has a first lateral wall that surrounds a longitudinal axis of the degassing device and a bottom wall that is inclined with respect to a longitudinal axis of the degassing device (see col. 3, lines 38-56 and col. 4, lines 14-18), wherein the outlet port opens in the downstream portion of the second chamber at a location furthest to the passageway,

Art Unit: 1776

wherein the first chamber, the second chamber and the passageway therebetween are arranged such that a flow pattern comprises a component that is tangential to the opening to keep gas bubbles in motion along an inner surface of the opening, wherein the device comprises an inlet port for liquid (at bottom of 1), and wherein the second chamber comprises an upstream portion extending above the passageway that has a decreasing cross-section, with a larger cross-section that is substantially level with the passageway and a smaller cross-section that is substantially level with the opening 17 at Fig. 1 and col. 2, line 6 to col. 4, line 44.

EP 0 292 445 does not disclose a hydrophobic membrane closing the opening, but Lipps et al. teaches a similar system using a hydrophobic membrane (157) to close an opening for venting air bubbles to atmosphere at col. 7, lines 3-27.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the hydrophobic membrane of Lipps et al. into the system of EP 0 292 445 in place of the vent to provide automatic venting of air bubble to atmosphere, to prevent passage of any blood through the opening and eliminate the need for a recirculation circuit, and to eliminate the blood-air interface, as suggested by Lipps et al.

With regard to claims 38-41 and 66, while EP 0 292 445 does not disclose the downstream portion of the first chamber being conical and the passage way opening at the tip of a cone or upstream portion of the first chamber having an increasing or decreasing cross-section, such modification would be obvious to one of ordinary skill in

Art Unit: 1776

the art in that changing shape is merely a choice of design. See *In re Dailey et al.*, 149 USPQ 47.

With regard to claims 45 and 68, the ratio of diameters could be selected as a routine matter of design choice depending on the quantity and characteristics of the fluid to be degassed in that changing size is a routine choice of design. See *In re Rose*, 105 USPQ 237 and *In re Reven* 156 USPQ 679.

With regard to claims 46-49, 69 and 70, it is noted that the device of EP 0 292 445 will inherently meet the limitations of claims 46, 48, 69 and 70 since the velocities and velocity ratios will inherently be greater than a predetermined value. Additionally, the specifically recited velocity and flow rate recited in claims 47 and 49 could be selected as a matter of routine design choice depending on the quantity and characteristics of the fluid to be degassed in that changing size is a routine choice of design. See *In re Rose*, 105 USPQ 237 and *In re Reven* 156 USPQ 679.

6. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application Publication EP 0 292 445 and Lipps et al. (US 4,234,871), and further in view of Nagai (US 2001/0052290 A1).

EP 0 292 445 does not teach a pressure measurement port for a pressure sensor, but Nagai teaches a similar system having such a device at Fig. 1 and paragraph [0015] and one of ordinary skill in the art would have recognized that such a

Art Unit: 1776

device could be incorporated into the device of EP 0 292 445 to allow the pressure to be measured and controlled.

7. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application Publication EP 0 292 445 and Lipps et al. (US 4,234,871), and further in view of Spadaccini et al. (US 6,315,815 B1).

EP 0 292 445 does not teach the membrane having a protective member, but Spadaccini et al. teaches providing a similar membrane with a substrate layer for support and reinforcement at col. 2, lines 47-48.

8. Claims 58-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (US 4,784,768) in view of European Patent Application Publication EP 0 292 445.

Mathieu discloses a filtration device comprising an elongated housing (1), a filtration membrane (4,5) arranged in the elongated housing, and an end cap assembly (2,3) connected to the elongated housing and comprising an end wall having a central axis, and a peripheral wall surrounding the end wall for connection to an end of the housing at Figs. 1-3, the abstract, and col. 3, line 64 to col. 8, line 6.

Mathieu does not teach a degassing device connected to the end cap, but as noted above EP 0 292 445 teaches a degassing device for blood having the recited structure. EP 0 292 445 also teaches the degassing device being connected to the outlet of a filtration device at col. 4, lines 29-44. Thus one of ordinary skill would have

Art Unit: 1776

recognized that the two could be connected in series to eliminate any air bubbles in the fluid exiting the Mathieu device prior to reintroduction into the body. The specific arrangement and placement of the filter and degasification device could be selected as a matter of design choice in that shifting the location of parts without otherwise modifying the operation of the device is merely a choice of design. See *In re Japikse*, 86 USPQ 70.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Kent, Schnell, Lindsay et al., Matkovich et al., Frederick et al., Katsura and Brugger et al. references disclose similar systems.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (10:00 AM to 6:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1776

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason M. Greene/  
Primary Examiner, Art Unit 1776

jmg  
April 5, 2011